

PCT09

RAW SEQUENCE LISTING

3 <110 - APPLICANT: POLYMEROPOULOUS, MIHAEL

PATENT APPLICATION: US/09/446,628

DATE: 02/27/2002

TIME: 13:28:32

Input Set : A:\164334.app

Output Set: N:\CRF3\02272002\I446628.raw

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LAVEDAN, CHRISTIAN
      .1
              LEROY, ELISABETH
              NUSSBAUM ROBERT
              JOHNSON, WILLIAM
              DUVOISIN. ROGER
      ×
     10 <120 - TITLE OF INVENTION: CLONING OF A GENE MUTATION FOR PARKINSON'S DISEASE
     12 <130 - FILE REFERENCE: 31978-164334
     14 - 140 - CURRENT APPLICATION NUMBER: 09/446,628
     15 - 141 - CURRENT FILING DATE: 1998-06-25
     1' -160 - NUMBER OF SEQ ID NOS: 25
     19 (170 - SOFTWARE: Patentin Vor. 2.1
     21 - 210 - SEQ ID NO: 1
     23 (211) LENGTH: 216
     23 (212) TYPE: DNA
     24 - 213 - ORGANISM: Homo sapiens
     26 (220 > FEATURE:
     27 <221 > NAME/KEY: modified_base
     28 <222> LOCATION: (133)
     29 (223) OTHER INFORMATION: a, t, c, g, other or unknown
     31 <220 > FEATURE:
     32 - C221 NAME/KEY, CDS
     33 - 3222 LOCATION: (56)..(97)
     35 <400% SEQUENCE: 1
     36 qctaatcage aatttaagge tagettgaga ettatgtett gaatttgttt tigta gge
     37
                                                                        Gly
     38
                                                                          1
                                                                             107
     40 fice aaa ace aaq gaq gga gtg gtg cat ggt gtg aca aca ggtaagetee
     41 Ser Lys Thr Lys Glu Gly Val Val His Gly Val Thr Thr
     41
W--> 44 attgtgetta tatcaaagat gatatntaaa gtatetagtg attagtgtgg eecagtatea 167
     4n agattoctat gaaattgtaa aacaatcact gagcatctaa gaacatatc
                                                                             216
     49 <210> SEQ ID NO: 2
     50 <211: LENGTH: 22
     51 -: 212> TYPE: DNA
     52 <213> ORGANISM: Artificial Sequence
     54 ≈220 FEATURE:
     55 + 223: OTHER INFORMATION: Description of Artificial Sequence: Primer
     57 -:400: SEQUENCE: 2
                                                                             22
     58 gotaatcago aatttaggot ag
     61 <210% SEQ ID NO: 3
     62 <2110 LENGTH: 21
     63 -:212: TYPE: DNA
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RAW SEQUENCE LISTING DATE: 02/27/2002 FATENT APPLICATION: US/09/446,628 TIME: 13:28:32

Input Set : A:\164334.app

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64 <213 · ORGANISM: Artificial Sequence
66 <220: FEATURE:
67 <223 OTHER INFORMATION: Description of Artificial Sequence: Primer
69 - 4000 - SEQUENCE: 3
                                                                       21
70 chatacaaga atctacgagt c
73 -: 210: SEQ ID NO: 4
74 -: 211! LENGTH: 393
75 (212) TYPE: PRT
7m (213) ORGANISM: Homo sapiens
78 -: 400) - SEQUENCE: 4
79 Met Glu Thr Ala Ser Pro Val Ala Leu Pro His Glu Met Glu Thr Leu
                                        10
                   5
82 Tyr Ser Gly Leu Tyr Leu Glu Ser Glu Arg Leu Tyr Ser Ala Leu Ala
\mathsf{H}^{\mathsf{H}}
               20
                                     25
85 Len Tyr Ser Gly Leu Gly Leu Tyr Val Ala Leu Val Ala Leu Ala Leu
                                4.0
                                                     45
8h
            3.5
88 Ala Ala Leu Ala Ala Leu Ala Gly Leu Leu Tyr Ser Thr His Arg Leu
84
                                                 60
91 Tyr Ser Gly Leu Asn Gly Leu Tyr Val Ala Leu Ala Leu Ala Gly Leu
                        70
94 Ala Leu Ala Ala Leu Ala Gly Leu Tyr Leu Tyr Ser Thr His Arg Leu
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                                        90
97 Tyr Ser Gly Leu Gly Leu Tyr Val Ala Leu Leu Glu Thr Tyr Arg Val
                                   105
              100
100 Ala Leu Gly Leu Tyr Ser Glu Arg Leu Tyr Ser Thr His Arg Leu Tyr
            115
                                 120
                                                     125
103 Ser Gly Leu Gly Leu Tyr Val Ala Leu Val Ala Leu His Ile Ser Gly
                            1.35
       130
106 Leu Tyr Val Ala Leu Ala Leu Ala Thr His Arg Val Ala Leu Ala Leu
                                             155
                        150
107 145
109 Ala Gly Leu Leu Tyr Ser Thr His Arg Leu Tyr Ser Gly Leu Gly Leu
                                         170
                    165
112 Asn Val Ala Leu Thr His Arg Ala Ser Asn Val Ala Leu Gly Leu Tyr
                                     185
                180
113
115 Gly Leu Tyr Ala Leu Ala Val Ala Leu Val Ala Leu Thr His Arg Gly
                                                     205
            195
                                 200
116
1:8 Leu Tyr Val Ala Leu Thr His Arg Ala Leu Ala Val Ala Leu Ala Leu
                             215
119
        210
121 Ala Gly Leu Asn Leu Tyr Ser Thr His Arg Val Ala Leu Gly Leu Gly
                                             235
                        230
124 Leu Tyr Ala Leu Ala Gly Leu Tyr Ser Glu Arg Ile Leu Glu Ala Leu
                    245
                                         250
127 Ala Ala Leu Ala Ala Leu Ala Thr His Arg Gly Leu Tyr Pro His Glu
                260
                                     265
130 Val Ala Leu Leu Tyr Ser Leu Tyr Ser Ala Ser Pro Gly Leu Asn Leu
           275
                                                     285
131
                                 280
133 Glu Gly Leu Tyr Leu Tyr Ser Ala Ser Asn Gly Leu Gly Leu Gly Leu
                             295
      290
136 Tyr Ala Leu Ala Pro Arg Gly Leu Asn Gly Leu Gly Leu Tyr Ile Leu
```

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Input Set A:\164334.app
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137	305					310					315					320
		Len	Glu	Gly			Ser	Pro	Met	Glu		Pro	Ara	Val	Ala	
$\frac{13}{140}$	· 1, C1	1	Sid	311	325		501			330					335	
	Δ 1.4	Sor	Pro	Pro		Ala	Ser	Pro	Ala		Asn	Gly	Leu	Ala		Ala
141	73.104	A) Y	110	340	111.9	ritu	501	E 1. v	345	DCI	11.511	3-1	L (.	350		
	The	Tur	Δrα		Lan	M=t	Glu	Thr		Ara	Ser	Glu	Ara		Leu	Gly
146	1 111	1 Y I	355	,31 1	Li ti ti	111515	JIU	360	110	mr 9	501	'J + U	365	or I	Lea	311
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		GLU	Inr	Ala		Pro	val	Ald	Leu		HIS	GIU	MEC	GIU		Pen
162					5		~ .	_		10				. 1	15	
	1.1	ser	Gly	Leu	Tyr	Fen	GLU	ser		Arg	Leu	lyr	Ser		Leu	Ala
165				20			_	_	25		_			30	. 1	
	Letu	Tyr		Gly	Leu	G17	Leu		Val	Ala	Leu	Val		Leu	Ala	Leu
168			35			_		4 ()	_		_		45			
	Ala		Leu	Ala	Ala	Leu		$\operatorname{GL}_T^{\omega}$	Leu	Leu	Tyr		Thr	HIS	Arg	Pen
171		50					55			- 3		60	_	- 1	2.1	_
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174	to Si					70					75		_,			80
	Ala	Leu	Ala	Ala		Ala	Gly	Leu	Tyr		Tyr	Ser	Thr	Hls		Leu
177					85					90					95	
179	Γ∵r	Ser	Gly	Leu	Gly	Leu	Tyr	Val		Leu	Leu	Glu	Thr		Arg	Vall
180				100					105					110		
182	Ala	Leu		Leu	Tyr	Ser	Glu		Leu	Tyr	Ser	Thr		Arg	Leu	Tyr
183			115					120					125	_		
185	ser	_	Leu	Gly	Leu	Tyr		Ala	Leu	Val	Ala		His	He	Ser	GLY
186		130					135					140				_
		Tyr	Val	Ala	L⊕u		His	Arg	Thr	His	_	Val	Ala	Leu	Ala	
189						150					155				- 1	160
191	Ala	Gly	Leu	Leu		Ser	Thr	His	Arg		Tyr	Ser	Gly	Leu		Leu
$1 \cdots$					165					170					175	
				Leu												Tyr
195				180												
147	GLY	Leu	_	Ala	Leu	Ala	Val		Leu	Val	Ala	Leu		His	Arg	Gly
148			195					200					205			
	Leu	Tyr	Val	Ala	Leu	Thr		Arg	Ala	Leu	Ala		Ala	Leu	Ala	Leu
201		210					215					220				
203	Мlа	Gly	Leu	Asn	Leu	Tyr	Ser	Thr	His	Arg		Ala	Leu	Gly	Leu	
204						230					235					240
206	Leu	Tyr	Ala	Leu	Ala	Gly	Leu	Tyr	Ala		Asn	Ile	Leu	Glu		Leu
207					245					250					255	
209	Ala	Ala	Leu	Ala	Ala	Leu	Ala	Thr	His	Arg	Gly	Leu	туг	Pro	His	Glu

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DATE: 02/27/2002

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216		290					295					300				
218	Leu	Tyr	Ihr	$T \ni r$	Arg		Arg	Gly	L⊷u	Asn		Leu	Gly	Leu	Tyr	
219	305					310					315					320
221	Leu	Glu	Leu	Glu	Gly	Leu	Ala	Ser	Pro	Met	Glu	Thr	Pro	Arg	Val	Ala
222					325					330					335	
224	Leu	Ala	Ser	Pro	Pro	Arg	Ser	$\operatorname{G} \operatorname{L} \operatorname{u}$	Arg	ser	Glu	Arg	Gly	Leu	Ala	L⊕u
225				340					345					350		
117	Ala	Thr	Гуr	Arg	Gly	Leu	Met	Glu	Thr	Pro	Arg	Ser	Glu	Arg	Gly	Leu
228			355					360					365			
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.: 3 1.	•	+70	-		•		375	-	•			380				
2333	Arg	G1v	[.eu	Pro	Arq	Glv	Leu	Ala	Leu	Ala						
234	385	- 4			and the	390										
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244	1	12000	.71	T		Lau	C1.,	Com	C1		Mat	210	The	λla		λ 1 · 2
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247		T		20	T	.a.1	T	T	25	7 l -	т	17 m 1	3 1 6	30	1 1 0	T
	Leu	Tyr		Gly	Leu	GLY	Leu		val	Ala	Leu	val		ren	Ala	Leu
250			35		- 1			40				-	45	** * -		
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253		50					55					60				_
		Ser	Gly	L+Hu	Asn		Leu	Tyr	Va⊥	Ala		Thr	His	Arg	GT7.	
256	€.5					7()					75					80
	A.l _a	Leu	Ala	Ala		Ala	Gly	Leu	Leu		Ser	Thr	His	Arg		T_{J} r
259					85					90					95	
	Ser	Gly	Leu	Gly	Leu	Tyr	Val	Ala	Leu	Leu	Glu	Thr	Tyr	Arg	Val	Ala
262				100					105					110		
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265			115					120					125			
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168		130					135					140				
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277			_	180	_	,	_	-	185		-	1		190	1	
	Tur	Ala	Leu	Ala	Va l	Ala	Leu	Pro		Glu	Ser	G] u	Ara	Glv	Leu	Tyr
280	- / -		195					200					205	2		- 4 -
	Ala	Len		Gly	Len	Tvr	Ala		Asn	He	Leu	Glu		Leu	Ala	Ala
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Input Set : A:\164334.app

Output Set: N:\CRF3\02272002\I446628.raw

233		210					215					220				
	Leu		Ala	Leu	Ala	Thr		Arg	Gly	Leu	Tyr	Leu	Glu	Val	Ala	Leu
	225					230		_	•		235					240
		Ivr	Ser	Leu	Tyr	Ser	Gly	Leu	Gly	Leu	Pro	His	Glu	Pro	Arg	Thr
239		- 2			245		•			2.50					255	
	His	Ara	Ala	Ser		Leu	Glu	Leu	Ivr	Ser	Pro	Ara	Gly	Leu	Gly	Leu
243				260					265				-	270		
	Val	Ala	I ,⊃11	Ala	Len	Ala	Glv	L⊬u		Glv	Leu	Ala	Leu		Ala	Leu
245			275				1	280		1			285			
	Ala	alv		GLY	T.≥u	Pro	Ara		Glu	Tle	Leu	Glu		Leu	Pro	Ara
298	111.0	290	11.5 (4	3.21	1111111111		295		514		200	300	5 - 1)
	Len		M∍t	Glu	Thr	Glv		Pro	Ara	Glv	Leu		Leu	Tvr	Glv	Leu
	395	11.4	1150	310	1,111	310	204			311	315	3 + 1	234	- / -		320
		c:111	Ara	Thr	Thr		Glv	Len	Glv	E.en		Len	Asn	Pro	Ara	
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320 322 323	1 T∵r	Ser	Gly	Leu 20	5 Tyr	Leu	Glu	Ser	Glu 25	10 Arg	Leu	Tyr	Ser	Ala 30	15 Leu	Ala
320 322 323 325	1 T∵r	Ser	Gly Ser	Leu	5 Tyr	Leu	Glu	Ser Leu	Glu 25	10 Arg	Leu	Tyr	Ser Leu	Ala 30	15 Leu	Ala
320 322 323 325 326	1 Tyr Leu	Ser Tyr	Gly Ser 35	Leu 20 Gly	5 Tyr Leu	Leu Val	Glu Ala	Ser Leu 40	Glu 25 Val	10 Arg Ala	Leu Leu	Tyr Ala	Ser Leu 45	Ala 30 Ala	15 Leu Ala	Ala Leu
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320 322 323 325 326 328 329	1 Tyr Leu Ala	Ser Tyr Ala 50	Gly Ser 35 Leu	Leu 20 Gly Ala	5 Tyr Leu Gly	Leu Val Leu	Glu Ala Leu 55	Ser Leu 40 Tyr	Glu 25 Val Ser	10 Arg Ala Thr	Leu Leu His	Tyr Ala Arg 60	Ser Leu 45 Leu	Ala 30 Ala Tyr	15 Leu Ala Ser	Ala Leu Gly
320 322 323 325 326 328 329 331	1 Tyr Leu Ala Leu	Ser Tyr Ala 50	Gly Ser 35 Leu	Leu 20 Gly	5 Tyr Leu Gly	Leu Val Leu Val	Glu Ala Leu 55	Ser Leu 40 Tyr	Glu 25 Val Ser	10 Arg Ala Thr	Leu Leu His Ala	Tyr Ala Arg 60	Ser Leu 45 Leu	Ala 30 Ala Tyr	15 Leu Ala Ser	Ala Leu Gly Ala
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320 322 323 325 326 328 329 331 332 334	1 Tyr Leu Ala Leu 65	Ser Tyr Ala 50 Asn	Gly Ser 35 Leu Gly	Leu 20 Gly Ala	5 Tyr Leu Gly Tyr	Leu Val Leu Val 70	Glu Ala Leu 55 Ala	Ser Leu 40 Tyr Leu	Glu 25 Val Ser Ala	10 Arg Ala Thr Leu Thr	Leu Leu His Ala 75	Tyr Ala Arg 60 Gly	Ser Leu 45 Leu Leu	Ala 30 Ala Tyr Ala	15 Leu Ala Ser Leu Ser	Ala Leu Gly Ala 80
320 322 323 325 326 328 329 331 332 334 335	1 Tyr Leu Ala Leu 65 Ala	Ser Tyr Ala 50 Asn Leu	Gly Ser 35 Leu Gly Ala	Leu 20 Gly Ala Leu Gly	5 Tyr Leu Gly Tyr Leu 85	Leu Val Leu Val 70 Tyr	Glu Ala Leu 55 Ala Leu	Ser Leu 40 Tyr Leu Tyr	Glu 25 Val Ser Ala Ser	10 Arg Ala Thr Leu Thr 90	Leu His Ala 75	Tyr Ala Arg 60 Gly Arg	Ser Leu 45 Leu Leu Leu	Ala 30 Ala Tyr Ala Tyr	15 Leu Ala Ser Leu Ser 95	Ala Leu Gly Ala 80 Gly
320 322 323 325 326 328 329 331 332 334 335 337	1 Tyr Leu Ala Leu 65 Ala	Ser Tyr Ala 50 Asn Leu	Gly Ser 35 Leu Gly Ala	Leu 20 Gly Ala Leu Gly	5 Tyr Leu Gly Tyr Leu 85	Leu Val Leu Val 70 Tyr	Glu Ala Leu 55 Ala Leu	Ser Leu 40 Tyr Leu Tyr	Glu 25 Val Ser Ala Ser Glu	10 Arg Ala Thr Leu Thr 90	Leu His Ala 75	Tyr Ala Arg 60 Gly Arg	Ser Leu 45 Leu Leu Leu	Ala 30 Ala Tyr Ala Tyr	15 Leu Ala Ser Leu Ser 95	Ala Leu Gly Ala 80 Gly
320 322 323 325 326 328 329 331 332 334 335 337 338	1 Tyr Leu Ala Leu 65 Ala	Ser Tyr Ala 50 Asn Leu Gly	Gly Ser 35 Leu Gly Ala Leu	Leu 20 Gly Ala Leu Gly Tyr 100	5 Tyr Leu Gly Tyr Leu 85 Val	Leu Val Leu Val 70 Tyr	Glu Ala Leu 55 Ala Leu Leu	Ser Leu 40 Tyr Leu Tyr Leu	Glu 25 Val Ser Ala Ser Glu 105	10 Arg Ala Thr Leu Thr 90 Thr	Leu His Ala 75 His	Tyr Ala Arg 60 Gly Arg	Ser Leu 45 Leu Leu Val	Ala 30 Ala Tyr Ala Tyr Ala 110	15 Leu Ala Ser Leu Ser 95 Leu	Ala Leu Gly Ala 80 Gly Gly
320 322 323 325 326 328 329 331 332 334 335 337 338 340	Tyr Leu Ala Leu 65 Ala Leu Leu	Ser Tyr Ala 50 Asn Leu Gly Tyr	Gly Ser 35 Leu Gly Ala Leu Ser	Leu 20 Gly Ala Leu Gly Tyr 100 Glu	5 Tyr Leu Gly Tyr Leu 85 Val	Leu Val Leu Val 70 Tyr Ala	Glu Ala Leu 55 Ala Leu Leu Arg	Ser Leu 40 Tyr Leu Tyr Leu Gly	Glu 25 Val Ser Ala Ser Glu 105 Thr	10 Arg Ala Thr Leu Thr 90 Thr	Leu Leu His Ala 75 His Tyr	Tyr Ala Arg 60 Gly Arg Arg Leu	Ser Leu 45 Leu Leu Val Tyr	Ala 30 Ala Tyr Ala Tyr Ala 110	15 Leu Ala Ser Leu Ser 95 Leu	Ala Leu Gly Ala 80 Gly Gly
320 322 323 325 326 328 329 331 332 334 335 337 338 340 341	1 Tyr Leu Ala Leu 65 Ala Leu	Ser Tyr Ala 50 Asn Leu Gly Tyr	Gly Ser 35 Leu Gly Ala Leu Ser 115	Leu 20 Gly Ala Leu Gly Tyr 100 Glu	5 Tyr Leu Gly Tyr Leu 85 Val	Leu Val Leu Val 70 Tyr Ala	Glu Ala Leu 55 Ala Leu Leu Arg	Ser Leu 40 Tyr Leu Tyr Leu Gly 120	Glu 25 Val Ser Ala Ser Glu 105 Thr	10 Arg Ala Thr Leu Thr 90 Thr	Leu Leu His Ala 75 His Tyr	Tyr Ala Arg 60 Gly Arg Arg Leu	Ser Leu 45 Leu Leu Val Tyr 125	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser	15 Leu Ala Ser Leu Ser 95 Leu Gly	Ala Leu Gly Ala 80 Gly Gly Leu
320 323 325 326 328 329 331 332 334 335 337 338 340 341 343	1 Tyr Leu Ala Leu 65 Ala Leu	Ser Tyr Ala 50 Asn Leu Gly Tyr Leu	Gly Ser 35 Leu Gly Ala Leu Ser 115	Leu 20 Gly Ala Leu Gly Tyr 100 Glu	5 Tyr Leu Gly Tyr Leu 85 Val	Leu Val Leu Val 70 Tyr Ala	Glu Ala Leu 55 Ala Leu Leu Arg	Ser Leu 40 Tyr Leu Tyr Leu Gly 120	Glu 25 Val Ser Ala Ser Glu 105 Thr	10 Arg Ala Thr Leu Thr 90 Thr	Leu Leu His Ala 75 His Tyr	Tyr Ala Arg 60 Gly Arg Arg Leu Ser	Ser Leu 45 Leu Leu Val Tyr 125	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser	15 Leu Ala Ser Leu Ser 95 Leu Gly	Ala Leu Gly Ala 80 Gly Gly Leu
320 323 325 326 328 329 331 332 334 335 337 338 340 341 343 344	1 Tyr Leu Ala Leu 65 Ala Leu Leu	Ser Tyr Ala 50 Asn Leu Gly Tyr Leu 130	Gly Ser 35 Leu Gly Ala Leu Ser 115 Tyr	Leu 20 Gly Ala Leu Gly Tyr 100 Glu Val	5 Tyr Leu Gly Tyr Leu 85 Val Arg	Leu Val Tyr Ala Ala Leu	Glu Ala Leu 55 Ala Leu Leu Arg Val 135	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala	Glu 25 Val Ser Ala Ser Glu 105 Thr	10 Arg Ala Thr Leu Thr 90 Thr His	Leu His Ala 75 His Tyr Arg	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140	Ser Leu 45 Leu Leu Val Tyr 125 Gly	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr	Ala Leu Gly Ala 80 Gly Gly Leu val
320 323 325 326 328 329 331 332 334 335 340 341 343 344 346	Tyr Leu Ala Leu 65 Ala Leu Gly Ala	Ser Tyr Ala 50 Asn Leu Gly Tyr Leu 130	Gly Ser 35 Leu Gly Ala Leu Ser 115 Tyr	Leu 20 Gly Ala Leu Gly Tyr 100 Glu	5 Tyr Leu Gly Tyr Leu 85 Val Arg	Leu Val Tyr Ala Ala Leu Thr	Glu Ala Leu 55 Ala Leu Leu Arg Val 135	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala	Glu 25 Val Ser Ala Ser Glu 105 Thr	10 Arg Ala Thr Leu Thr 90 Thr His	Leu His Ala 75 His Tyr Arg Ile Leu	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140	Ser Leu 45 Leu Leu Val Tyr 125 Gly	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu
320 323 325 326 328 329 331 332 334 335 340 341 343 344 346 347	Tyr Leu Ala Leu 65 Ala Leu Gly Ala 145	Ser Tyr Ala 50 Asn Leu Gly Tyr Leu 130 Leu	Gly Ser 35 Leu Gly Ala Leu Ser 115 Tyr	Leu 20 Gly Ala Leu Gly Tyr 100 Glu Val His	5 Tyr Leu Gly Tyr Leu 85 Val Arg	Leu Val Tyr Ala Ala Leu Thr	Glu Ala Leu 55 Ala Leu Leu Arg Val 135 His	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala Arg	Glu 25 Val Ser Ala Ser Glu 105 Thr Leu Val	10 Arg Ala Thr Leu Thr 90 Thr His	Leu His Ala 75 His Tyr Arg Ile Leu 155	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140 Ala	Ser Leu 45 Leu Leu Val Tyr 125 Gly Leu	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu Ala	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu 160
320 323 325 326 328 329 331 332 334 335 340 341 343 344 346 347 349	Tyr Leu Ala Leu 65 Ala Leu Gly Ala 145	Ser Tyr Ala 50 Asn Leu Gly Tyr Leu 130 Leu	Gly Ser 35 Leu Gly Ala Leu Ser 115 Tyr	Leu 20 Gly Ala Leu Gly Tyr 100 Glu Val	5 Tyr Leu Gly Tyr Leu 85 Val Arg Ala Arg	Leu Val Tyr Ala Ala Leu Thr	Glu Ala Leu 55 Ala Leu Leu Arg Val 135 His	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala Arg	Glu 25 Val Ser Ala Ser Glu 105 Thr Leu Val	10 Arg Ala Thr Leu Thr 90 Thr His Ala Gly	Leu His Ala 75 His Tyr Arg Ile Leu 155	Tyr Ala Arg 60 Gly Arg Arg Leu Ser 140 Ala	Ser Leu 45 Leu Leu Val Tyr 125 Gly Leu	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu Ala	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr Gly Val	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu 160
320 323 325 326 328 329 331 332 334 335 340 341 343 344 346 347 349 350	1 Tyr Leu Ala Leu 65 Ala Leu Gly Ala 145 Leu	Ser Tyr Ala 50 Asn Leu Gly Tyr Leu 130 Leu	Gly Ser 35 Leu Gly Ala Leu Ser 115 Tyr Thr Ser	Leu 20 Gly Ala Leu Gly Tyr 100 Glu Val His	5 Tyr Leu Gly Tyr Leu 85 Val Arg Ala Arg	Leu Val Tyr Ala Ala Leu Thr 150 Arg	Glu Ala Leu 55 Ala Leu Leu Arg Val 135 His	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala Arg	Glu 25 Val Ser Ala Ser Glu 105 Thr Leu Val Ser	10 Arg Ala Thr Leu Thr 90 Thr His Ala Gly 170	Leu His Ala 75 His Tyr Arg Ile Leu 155 Leu	Tyr Ala Arg 60 Gly Arg Leu Ser 140 Ala Gly	Ser Leu 45 Leu Leu Val Tyr 125 Gly Leu Leu	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu Ala Asn	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr Gly Val 175	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu 160 Ala
320 323 325 326 328 329 331 332 334 335 337 338 340 341 343 346 347 350 352	1 Tyr Leu Ala Leu 65 Ala Leu Gly Ala 145 Leu	Ser Tyr Ala 50 Asn Leu Gly Tyr Leu 130 Leu	Gly Ser 35 Leu Gly Ala Leu Ser 115 Tyr Thr Ser	Leu 20 Gly Ala Leu Gly Tyr 100 Glu Val His Thr	5 Tyr Leu Gly Tyr Leu 85 Val Arg Ala Arg	Leu Val Tyr Ala Ala Leu Thr 150 Arg	Glu Ala Leu 55 Ala Leu Leu Arg Val 135 His	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala Arg	Glu 25 Val Ser Ala Ser Glu 105 Thr Leu Val Ser	10 Arg Ala Thr Leu Thr 90 Thr His Ala Gly 170	Leu His Ala 75 His Tyr Arg Ile Leu 155 Leu	Tyr Ala Arg 60 Gly Arg Leu Ser 140 Ala Gly	Ser Leu 45 Leu Leu Val Tyr 125 Gly Leu Leu	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu Ala Asn Gly	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr Gly Val 175	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu 160 Ala
320 323 325 326 328 329 331 332 334 335 337 338 340 341 343 344 346 347 350 352 353	Tyr Leu Ala Leu 65 Ala Leu Gly Ala 145 Leu Leu	Ser Tyr Ala 50 Asn Leu Gly Tyr Leu 130 Leu Tyr	Gly Ser 35 Leu Gly Ala Leu Ser 115 Tyr Thr Ser Glu	Leu 20 Gly Ala Leu Gly Tyr 100 Glu Val His	5 Tyr Leu Gly Tyr Leu 85 Val Arg Ala Arg	Leu Val To Tyr Ala Ala Leu Thr 150 Arg Ser	Glu Ala Leu 55 Ala Leu Leu Arg Val 135 His Leu Asn	Ser Leu 40 Tyr Leu Tyr Leu Gly 120 Ala Arg Tyr Val	Glu 25 Val Ser Ala Ser Glu 105 Thr Leu Val Ser Ala 185	10 Arg Ala Thr Leu Thr 90 Thr His Ala Gly 170 Leu	Leu His Ala 75 His Tyr Arg Ile Leu 155 Leu Gly	Tyr Ala Arg 60 Gly Arg Leu Ser 140 Ala Gly Leu	Ser Leu 45 Leu Leu Val Tyr 125 Gly Leu Leu Tyr	Ala 30 Ala Tyr Ala Tyr Ala 110 Ser Leu Ala Asn Gly 190	15 Leu Ala Ser Leu Ser 95 Leu Gly Tyr Gly Val 175 Leu	Ala Leu Gly Ala 80 Gly Gly Leu Val Leu 160 Ala Tyr

Use of n and - or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence Using n or Xaa

VERIFICATION SUMMARY

DATE: 02/27/2002 PATENT APPLICATION: US/09/446,628 TIME: 13:28:33

Input Set : A:\164334.app

Output Set: N:\CRF3\02272002\I446628.raw

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L:44 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:681 M·341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:682 M.341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:683 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:684\ M.341\ W. (46) "n" or "Xaa" used, for SEQ ID#:11
L:687\ M:341\ W; (46) "n" or "Xaa" used, for SEQ ID#:11
L:689 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:690 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:691 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:694 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:699 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:701 M:341 W. (46) "n" or "Xaa" used, for SEQ ID#:11
L:708 M 341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:710 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:713 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:714 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:715 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:74l M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:12
L:922 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:923 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:924 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L\colon 925 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L\!:\!926 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:13
L:989 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:990 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:992 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:1002 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:1003 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:1006 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:14
L:1042 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:1043 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:15
L:1065 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:1069 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16
L:1087 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L\!:\!1117 M\!:\!341 W\!: (46) "n" or "Xaa" used, for SEQ ID#:18
L:1190 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1192\ M:341\ W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1193 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1202 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1207 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1209 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
L:1210 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:19
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